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| 09/613,695      | 07/10/2000  | Byung-in Ma          | 1293.1125/MDS       | 9690             |

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EXAMINER

YOUNG, WAYNE R

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2652

DATE MAILED: 06/22/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/613,695

**Applicant(s)**

MA ET AL.

**Examiner**

W. R. Young

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) 1-16 and 21 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 17-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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1. Claims 1-16 and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Applicant concedes that claims 8-9 and 11 do not read on the elected species of figures 3-4F. Claim 8 reads on the species of figures 6-7, claim 9 reads on the species of figure 6, and claim 11 reads on the species of figures 6 or 7.

Claims 1-7 do not read on the species of figures 3-4F. First, claim 1 specifies binarizing each of the outputs of **more than 2** optical detectors positioned along a line **diagonal** to a track center. This does not read on the elected species, which as shown in figure 3 has at most only 2 detectors, i.e., either "A/C" or "B/D", along a line diagonal to a track center. Second, claim 1 specifies phase locking to generate respective clock signals synchronized with each of the binarized outputs and detecting a phase difference between the synchronized clock signals. This also does not read on the elected species, which includes a matrix circuit 304 that provides **combined** signals to be binarized, phase locked, and phase differenced. Hence, **each** output is not binarized and **respective** clock signals are **not** synchronized to **each** output. Regarding this feature, claim 1 reads on the species of figure 5. Similarly, claim 2 drawn to a corresponding apparatus reads partly on the species of figure 5, rather than the species of figures 3-4F. Claims 3-7 are dependent on claim 2.

Claims 10, 13-16, and 21 do not read on the species of figures 3-4F, rather the species of figures 5, 6, or 7. Claim 10 specifies a circuit that phase locks **each** of binarized signals from first and second optical detectors to output first and second clock signals synchronized with the first and second binarized signals and phase detector which compares a phase of the first and

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second synchronized clock signals. This also does not read on the elected species, which includes a matrix circuit 304 that provides **combined** signals to be binarized, phase locked, and phase differenced. Claims 13-16 and 21 are dependent on claim 10. Claim 12 is dependent on claim 10 and further only reads on the species of figure 5.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no disclosure of how to make and use the equalizers 306a, 306b in figure 3 and as claimed in claims 18-20. Applicant claims that the equalizers increase high frequency components, but does not explain or illustrate what high frequency components are increased. Applicant claims that the equalizers include a differentiator and that the differentiator operates on frequencies less than a value, but does not disclose nor illustrate the characteristics thereof nor explain or illustrate what frequencies are operated on. Page 7 of the specification refers to weak high frequency components, but lacks specifics about what are the frequencies in order for one of skill to make and use an appropriate equalizer. Page 7 of the specification refers to removing noise components, but lacks specifics about what are the noise components and what frequencies they are at in order for one of skill to make and use an appropriate equalizer. Page 7 provides no guidance as what or how the differentiators are implemented into the apparatus for one of skill to

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make and use the invention. What are the characteristics of this differentiator and where is an illustration of input and output signal characteristics thereof as used in the apparatus? Too much is left to conjecture and undue experimentation for one of ordinary skill to make and use the invention.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-302277.

Note the patent abstract, figures 1 and 13-14, and the electronic translation, page 3, top, page 10, bottom - page 11, for “plurality of optical detectors” 21, “matrix circuit” 22, “circuit which binarizes” 24, “circuit which performs a phase lock operation” 127, 161, 163, “phase detector” 127, 151-154, 27, “equalizers” (claims 18-20 and as best interpreted in light of the disclosure) 23.

6. Applicant's arguments filed 3/9/04 have been fully considered but they are not persuasive.

In re page 6, the argument that detectors A and C and B and D provide support for the claimed “more than 2 optical detectors . . . along a diagonal to a track center” is not convincing, because a set of only 2 detectors A/C are positioned along a line diagonal to a track center and another set of only 2 detectors B/D are positioned along a second line diagonal to a track center.

In re page 6, the argument that A, B, C, and D are binarized in figure 3 and thus provide support for “binarizing each of the outputs of the optical detectors” as claimed in claims 1 and 2

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is not convincing, because the binarizing is performed on combined output signals AC1 and BD1 and not the outputs of the detectors. While applicant is correct that each and every element need not be claimed, i.e., the matrix circuit 304, the claimed functions must still describe what is disclosed. The matrix circuit produces combined signal outputs that can no longer be considered detector outputs as claimed.

In re page 7, the argument that in making a 112, 1<sup>st</sup> paragraph rejection, the Examiner must account for each of 8 factors listed by applicant as obtained from MPEP 2164.01(a) is erroneous. Applicant is directed to MPEP 2164.04 for what is required to make a prima facie case of lack of enablement.

In re page 7, the argument relative to the 112, 1<sup>st</sup> paragraph rejection, citing figures 8 and 9, note that figures 8 and 9 do not provide actual specifics as to the frequencies in order to make and use the equalizers as stated in the rejection.

In re page 7, regarding the argument relative to the 112, 1<sup>st</sup> paragraph rejection, citing US Patent 5,914,925 to show black boxes labeled "Equalizer and Comparator" and stating that since "this patent is presumed valid . . . prior to June 1999 one of ordinary skill would be able to make and use such a disclosure without undue experimentation", any argument based on the validity of a patent will not be considered a valid argument. See MPEP 1701. Applicant may cite patents that actually show how to make and use the claimed elements and then argue that one of ordinary skill would have known to use such elements or file a CIP and actually incorporate by reference to such patents.

In re page 8, the argument relative to the 102 rejection emphasizing that the reference shows "a PLCLK signal to adjust the amount of phase delay" while claimed is performing a

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phase lock operation on each signal to output clock signals, is not convincing. Note in drawing 14 that each signal a4 and b4 is phase locked.


7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. R. Young whose telephone and VoiceMail number is (703) 308-1554. If a plurality of attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (703) 305-9687.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**WAYNE R. YOUNG**  
**PRIMARY EXAMINER**  
**ART UNIT 2652**

wry/wry  
6/18/04